

REMARKS

Applicants and the undersigned are most grateful for the time and effort accorded the instant application by the Examiner. Claims 1-21 were pending in the instant application at the time of the outstanding Office Action. Of these claims, Claims 1, 11, and 21 are independent claims; the remaining claims are dependent claims. Claims 1-21 currently stand rejected and the rejections have been made final. Applicants respectfully request reconsideration and withdrawal of these rejections in light of the foregoing amendments and the following remarks.

Applicants briefly note that a Request for Continued Examination was submitted on April 28, 2008, directing that the previously submitted Amendment After Final be accepted as the submission. Applicants herewith supply this Supplemental Amendment, to be taken into consideration in addition to the previously entered submission. Thus, this Supplemental Amendment repeats the amendments made in the Amendment After Final and further amends certain claims and contains remarks limited to the art-based rejections set forth in the outstanding Office Action. The "Remarks" section of the previously submitted Amendment After Final (dated March 26, 2008) remains applicable and is therefore incorporated by reference as if fully set forth herein. As the previously submitted Amendment After Final has not yet been entered, the amendments made therein are repeated herein as reflected in the claim set submitted herewith.

It should also be noted that Applicants have amended certain claims in this application. Applicants are not conceding in this application that those claims are not

patentable over the art cited by the Examiner, as the claim amendments are only for facilitating expeditious prosecution of the instant application. Applicants respectfully reserve the right to pursue these and other claims in one or more continuations and/or divisional patent applications. Applicants specifically state no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Comments Regarding the Advisory Action

As an initial matter, Applicants note that the Examiner, in stating ‘it is noted that the argued term “raw input data” is not in the claims, so that related arguments are irrelevant to the rejection’ is clearly in error. *Advisory Action*, pp. 3. Applicants assert that “obtaining speech and audio data as input data” (Claim 1) is readily recognized by those of ordinary skill in the art as “raw input data” (i.e. unprocessed data) that is to be initially clustered.

Moreover, the Examiner, in stating “the term is not disclosed in the specification, so that even if the term is emended [sic] in the claim(s), it would be new subject matter” is clearly in error. *Id.* The Examiner is kindly reminded that “[t]he fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed.” MPEP 2163 (citing *Vas-Cath, Inc.*, 935 F.2d at 1563-64, 19 USPQ2d at 1117). Thus, Applicants state once again that those of ordinary skill in the art would recognize that the short-hand phrase “raw input data” is readily understood by those of ordinary

skill in the art to mean the speech/audio input data as recited in the claims and disclosed in the specification.

Finally, Applicants respectfully submit that the Examiner's reading of the claim language and the cited art is unreasonable and technically incorrect. The Examiner appears to misunderstand the essential difference between the cited art, discussing various types of model adaptations and different/irrelevant clustering techniques, and the instantly claimed invention, claiming a new clustering technique for **raw input speech and audio data** that, once clustered, can be utilized by any statistical model of choice for pattern recognition.

Rejections under 35 USC § 102

Claims 1-3 and 11-13 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6073096 (Gao et al.). Although Applicants respectfully disagree with the Examiner's understanding of the claimed subject matter and the cited art, solely in order to facilitate expeditious prosecution of this application, Applicants have amended the independent claims. Thus, Applicants respectfully request reconsideration and withdrawal of these rejections.

The teachings of Gao (as well as the other references) are readily distinguishable from the instantly claimed invention in as much as they do not teach any relevant methods of clustering data. Gao clearly teaches class specific, bottom-up or top-down clustering, not the instantly claimed clustering technique, as evidenced by the following:

Speaker clustering may be performed by different methods. One method is bottom-up, and another is top-down. When the bottom-up scheme is used, a Gaussian log likelihood is preferably used as a distance measure during the procedure. When top-down is used, Euclidean distance is preferably used. Other distance measures may be used in both clustering techniques, however. The Gaussian likelihood and the Euclidean distance may be obtained by...

Gao, Col. 5, lines 59-66; See also Gao, Col. 5, line 29-Col. 6, line 38 (entitled "Class-Specific Pre-Clustering Training Speakers"). Gao clearly does not teach the clustering techniques recited in the independent and dependant claims. Applicants respectfully submit that nowhere does Gao teach

clustering of said speech and audio data, said clustering further comprising: creating a predetermined number of non-overlapping subsets of the input data; said step of creating a predetermined number of non-overlapping subsets comprising splitting the input data recursively, wherein said splitting step comprises determining an eigenvector decomposition relating to the input data; said clustering being independent of any model wherein the splitting of the input data into a predetermined number of non-overlapping subsets occurs independent of a model and during the enrollment of a speaker in a speaker verification system; wherein there is no variability in the clustering due to randomness.

Claim 11 (emphasis added). These amendments find support in the original specification, including at pp. 4, line 12-pp. 6, line 16. Applicants therefore respectfully request reconsideration and withdrawal of the rejections under 35 USC 102.

Rejections under 35 USC § 103

Claims 4-10 and 14-20 have been rejected under 35 U.S.C. § 103(a) as being obvious in light of Gao et al. in combination with U.S. Patent No. 6343267 (Kuhn et al.). Although Applicants respectfully disagree with the Examiner's understanding of the claimed subject matter and the cited art, solely in order to facilitate expeditious

prosecution of this application, Applicants have amended the independent claims. Applicants respectfully request reconsideration and withdrawal of these rejections.

As previously stated, Kuhn deals with speaker and environment adaptation, which is fundamentally different from data clustering. In Kuhn, the eigenvector/eigenvalue decomposition, a standard mathematical technique, is used for determining a feature space in which to represent speaker models, i.e., **not to cluster input speech/audio data** (e.g. during the enrollment of target speakers). Thus, nothing in Kuhn, nor in the state of the art, is sufficient to overcome the deficiencies of Gao or render the instantly claimed invention obvious under 35 USC 103(a). Applicants therefore respectfully request reconsideration and withdrawal of these rejections.

Applicants also note that dependant claim 10 has been amended to recite, *inter alia*, “an arrangement for, after splitting of the input data is complete, building a statistical model for pattern classification for each of the classes using any desired technique.” Claim 10. Claim 20 contains similar language. This language is supported by the original specification at pp. 7, lines 15-17, supports the notion that clustering (i.e. splitting the raw input speech/audio data) and statistical modeling are distinct, and is not taught by any of the cited references. Therefore, these claims are allowable for this reason in addition to being dependent from allowable independent claims.

Request for Telephone Interview

Applicants request that, if after taking up and considering this Supplemental Amendment, the Examiner determines that there are outstanding issues precluding the

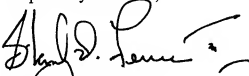
claims from being in condition for allowance, that the Examiner contact the undersigned at the telephone number listed below. Applicants submit that this is an appropriate request considering the extensive prosecution history of this application and the recent change of Examiners.

Conclusion

In view of the foregoing, it is respectfully submitted that independent Claims 1, 11, and 21 fully distinguish over the applied art and are thus allowable. By virtue of dependence from Claims 1 and 11, it is thus also submitted that Claims 2, 3, 5-10, 12, 13 and 15-20 are also allowable at this juncture.

In summary, it is respectfully submitted that the instant application, including Claims 1-3, 5-13 and 15-21, is presently in condition for allowance. Notice to the effect is hereby earnestly solicited. If there are any further issues in this application, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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